# From Buying to Building: Embracing the Paradigm Shift with SAP Business Technology Platform

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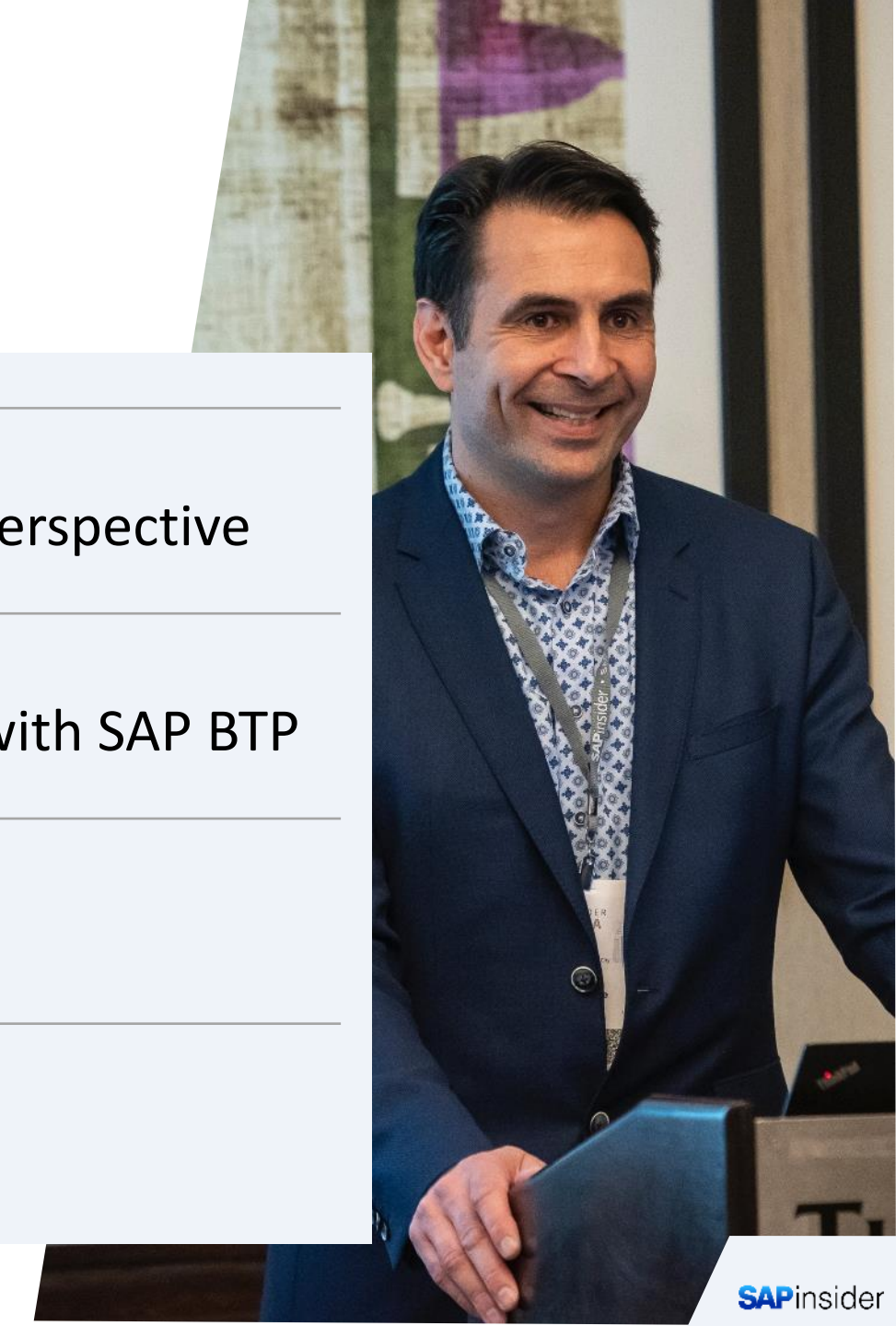
# In This Session

**Embracing the Paradigm Shift with SAP Business Technology Platform**

- We are living in an evolving digital era, organizations are experiencing a profound paradigm change, transitioning from buying off-the-shelf software solutions to harnessing the power of development platforms like SAP Business Technology Platform (BTP).
- Digital Transformation  is organically enabling to divert from the constraints of pre-packaged solutions and embark on a journey of innovation and customization.
- Let’s explore how SAP BTP revolutionizes the way organizations approach software development.
- How do we embrace SAP BTP possibilities, agility, scalability, and efficiency in building applications and what changes organizations face.

# What we will cover

1. **Understanding**
   SAP BTP adoption from a customer perspective
2. **Inspiration**
   Enable your digitalization programs with SAP BTP
3. **Impact**
   Cloud native organizational change
4. **Wrap-up**



# Understanding

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- SAP BTP adoption from a customer perspective
  - Dynamics of moving to the Cloud
  - Turning the organic introduction of cloud platforms to a strategic opportunity
  - Relevance, Changes & Challenges of embracing BTP in your IT portfolio

# Moving to the cloud

Main Industry Segments:

**Infrastructure-as-a-Service (IaaS)**

- Reduce exposure to IT infrastructure
- Low hanging fruit

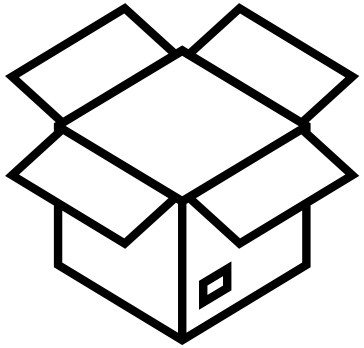
**Software-as-a-Service (SaaS)**

- Application with clear functional use case
- Pillar for “Cloud First” Strategies

**Platform-as-a-Service (PaaS)**

- Develop, Manage and Run

# Unboxing a cloud application (SaaS)

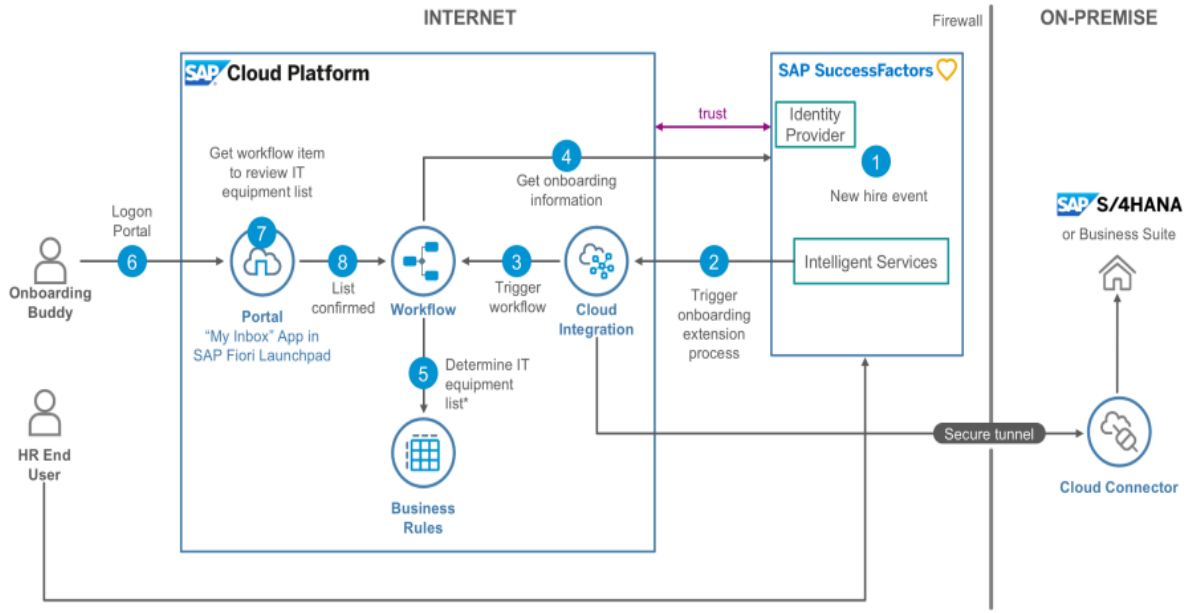


- Outside Packaging
  - Core functionality
  - Automated provisioning
  - Subscription based billing
  - High availability
  - Elastic Infrastructure
  - Data Security
  - Application Security
  - QoS
  - Audit
  - Updates

- Inside the box
  - Managed release cycles
  - Functional gaps
  - Limited extensibility and customization
  - New architecture
  - Integration and Orchestration backlog
  - A Platform
    - for Extensibility, Development and Operation Services

# Example Architecture: SuccesFactors (SaaS)

- SuccessFactors Application
  - Core HR, Talent Management, Employee Central
  - Application Management and Integration Services
- Business Technology Platform
  - BTP Cockpit
  - Identity service
  - Cloud Integration (iPaaS)
    - Integration Content
  - Workflow Management
    - Workflow and Business Rules
  - Portal

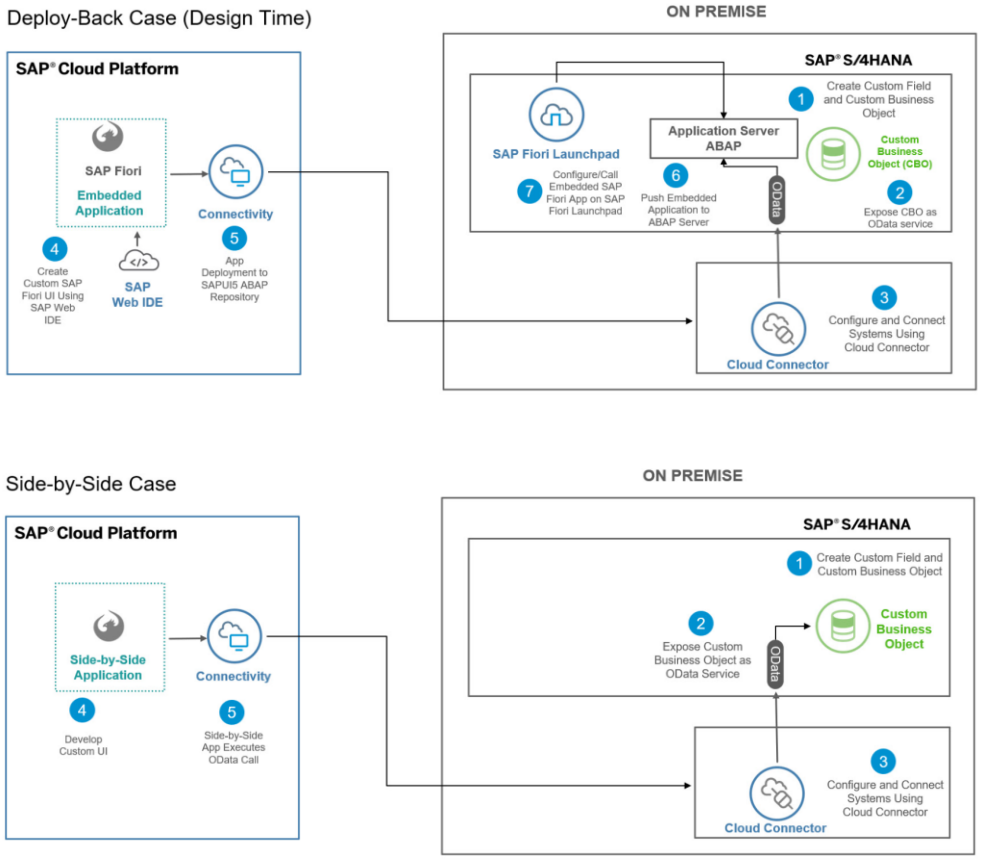



Source: SAP Blogs, Extend SuccessFactors with SAP Cloud Platform (2017)

# Example Architecture:  S/4 HANA Extensibility

- S/4 HANA (on-premise)
  - Core Functionality
  - Application Server
  - Events
  - API

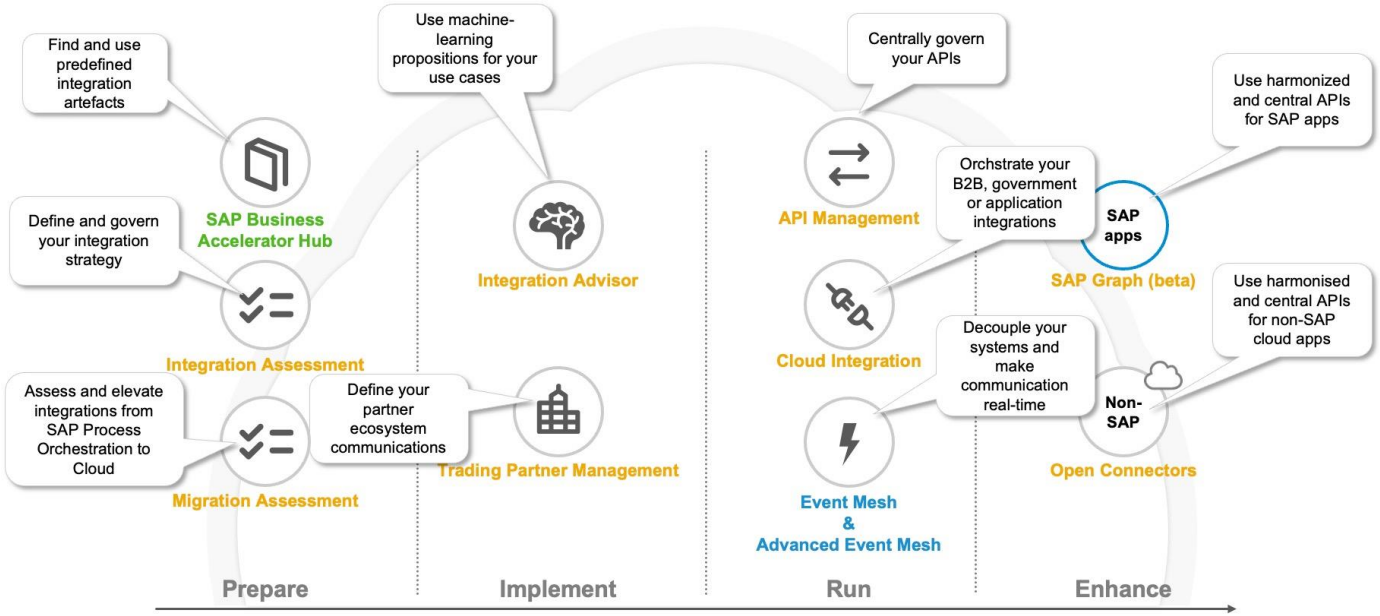
- Business Technology Platform
  - BTP Cockpit
  - Identity service
  - Connectivity Service
  - UI5 Runtime
  - Business Application Studio
  - BTP Launchpad
  - SAP Build Apps & Process Automation




Source: SAP Help, SAP Extensibility Explorer

# Example Architecture:  Integration Suite

- Integration Suite (iPaaS)
  - Orchestration
  - Integration
  - Connectivity
  - API
  - Events
- Business Technology Platform
  - BTP Cockpit
  - Identity service
  - Connectivity Service
  - Alert Management
  - Transport Management
  - Cloud Application Lifecycle Management

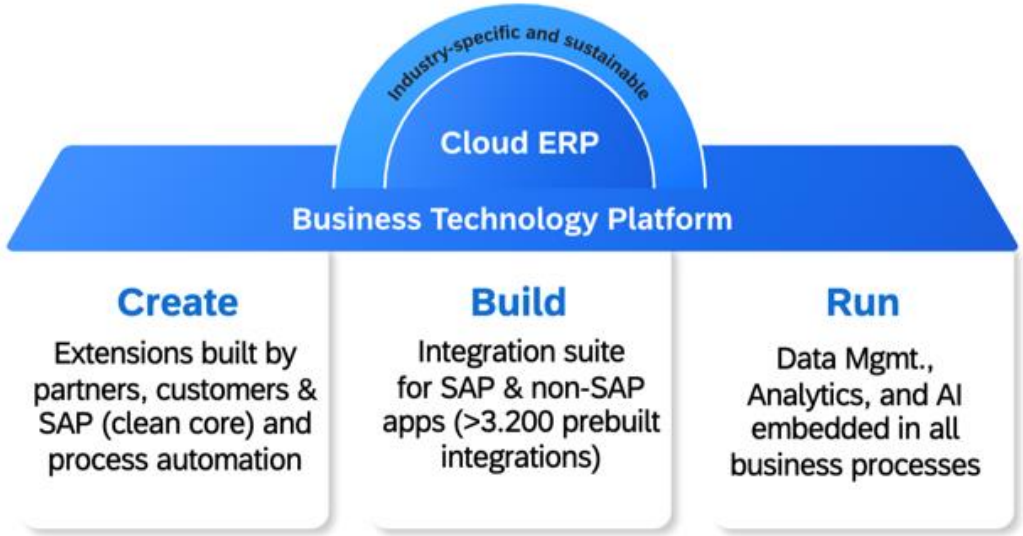



Source: SAP Blogs, SAP Integration Suite – Pragmatic Overview

# Platform-as-a-Service (PaaS)

***SAP BPT is a PaaS, often organically introduced.***

*PaaS by definition; Managed hardware, software, and infrastructure—for **developing**, **running**, and **managing** applications*




Source: SAP Saphire Financial Analyst and Investor Conference, May 2023

# Platform-as-a-Service (PaaS) - Strategic Relevance

- Clean Core
  - Side-by-Side Enhancement of Cloud Solutions
- Modernization
  - Replacing legacy homebrew solutions with cloud native solutions
  - Improve security, maintainability and access to data
- Innovation
  - Fast/Low-Cost MVP and PoC,
  - Modern technologies, ML, AI, Analytics
- Integration
  - Orchestrate business logic
  - Expose data and logic
  - Build rich hybrid solutions based open-standards

*PaaS as the technical foundation and enabler for **Innovation** and **Digital Transformation** programs.*

# Adopting a Software Culture

- **Digital Transformation**
  - **Digital focus** in your IT strategies
  - **Commitment** to organization and process changes
  - **Investment**
    - People skills and culture
    - Technology
    - Governance and change management
  - **Build** solutions on top of your digital core fitting your business needs

## Are we software houses?

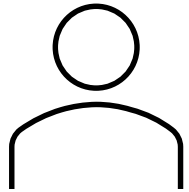
- We are developing more in-house specialized software
  - Proliferation of tools and Methodologies
    - No-Code/Low-Code/Pro-Code
    - DevOps/Agile/SAFe/Kanban
  - Software engineering practices adoption
    - CI/CD
    - Automated Testing
    - Faster feedback loops

- "***Build better software faster***"

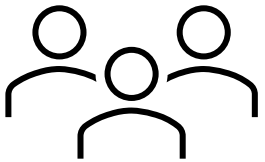
  David Farley, Continuous Delivery.

# Platform-as-a-Service (PaaS) – Adoption Challenges

- Platform Owner Responsibilities
  - New Technology
  - New Competences
- Cost Management
  - Subscriptions
  - CPEA/PAYG
- New Architecture
  - Cloud Applications
  - Cloud Services
  - Security and Trust



Platform Architect



Cloud Solutions Architect

# In perspective

- *Cloud based software delivery **platforms** are effectively part if modern IT landscapes*
- Becoming software houses goes hand-by-hand with adoption a software culture

***Therefore…***

- *Adjust to treat software engineering as a business while keeping your core business running and in focus*
- *Opportunity to adopt Engineering Excellence in your innovation practices and technology adoption*

# Inspiration

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- Enable your digitalization programs with SAP BPT
  - Components Architecture

- Case of building rich custom solutions
  - Enabling the Platform
  - Prepare Services and Tools
  - Build and Test, Automate
  - Operate and Expand

# SAP BTP – High Level Component View

SAP Business Technology Platform, Cockpit

Managed

**Computing Resources**

Geographic Location

Provider:

aws

Google Cloud

Microsoft Azure

Alibaba Cloud

**The Cloud Fabric**

Platform Resources As-a-Service

CLOUD FOUNDRY

kubernetes

Platform Services and Tools

**Trust**

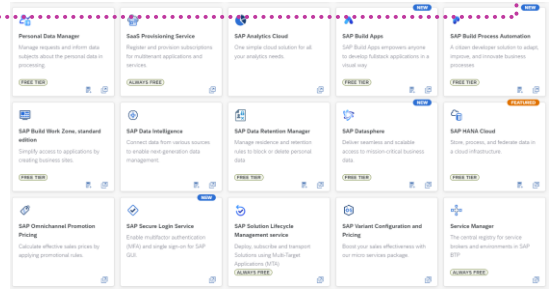
Access, Identity and Security

**Consumption Services**

- Foundation / Cross Services
  - App Dev, Integration, Data and Analytics
  - AI / Automation

**Subscriptions**

Software-as-a-Service & Tools



**Customer Applications**

- Monitor
- Application Lifecycle
- Expose and Analyze Data
- Integrate

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# Scenario – Digitalize Quality Assurance Process

- Issue: Improve long and expensive quality assurance process
  - A manual process to do quality assurance of the products
  - Users need to look for data in multiple systems
    - Some of those system are legacy, difficult to integrate and access to data
    - Some are on-premise, cloud-systems,
  - Several data points for systems need to be aggregated and interpreted
  - Progress and results  documented manually, prone to error.
  - Finding an issue will result of restarting the process as data could have changed
- Business Case:
  - Reduce the lead time for finished product to market.
  - Reduce quality assurance errors and deviations
- Solution objective:
  - Enable data access from backend systems
  - Consolidate data in central integrated applications
  - Modernize legacy homebrew applications to cloud native applications
  - Produce documentation automatically and stored in corporate CMS
  - Integrate results to backend ERP.

# Enabling the Platform

- Define an initial collection of services that could help to achieve the objective
    - Cloud  Integration / Integration Suite
    - Cloud Foundry Runtime
    - Business Application Studio
    - HANA Cloud
    - Fiori Launchpad (SAP Build WorkZone, standard)

- Billing Model: Enterprise Agreement (CPEA)
    - Commitment upfront for a minimum spend
    - Access to all services

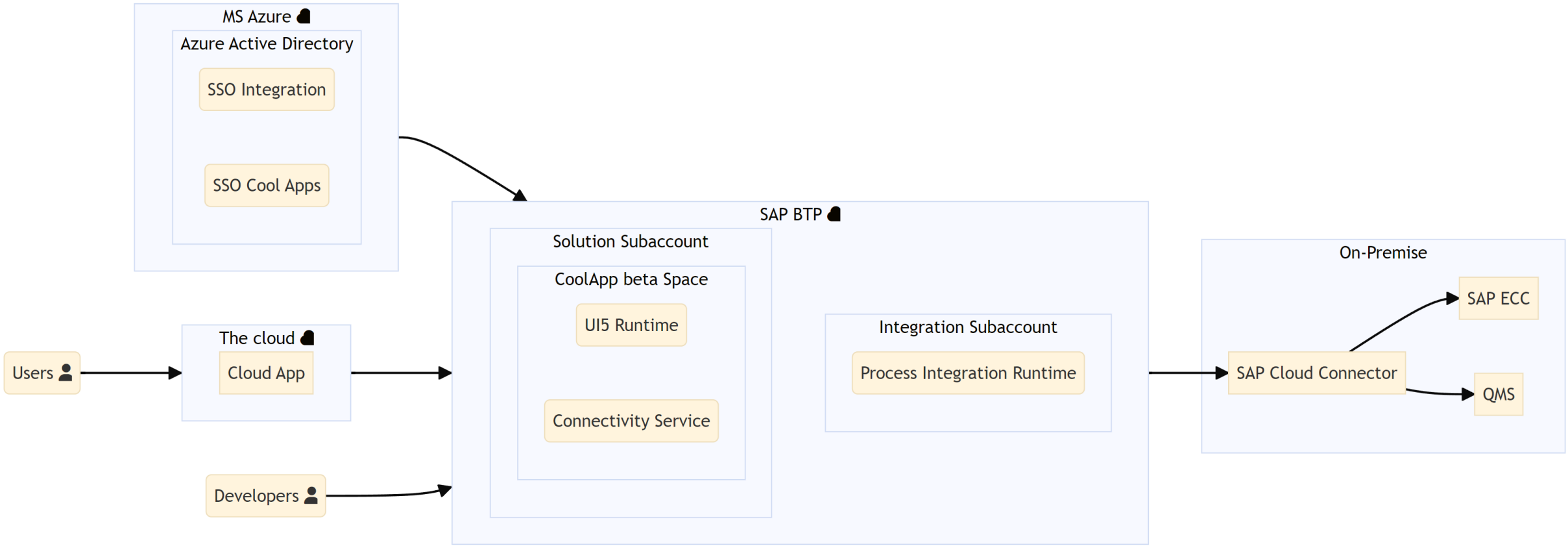
# Platform Architecture Blueprint

- Integration Suite (iPaaS)
  - Central Service, to be used across projects
  - Own Subaccount string
  - Alert Management and Transport Management
- Project Subaccounts
  - HANA Cloud instance central for the program
    - Share across application
  - Applications segregated under different Cloud Foundry Spaces
    - Development teams assigned to each space
  - Close cooperation with Platform architect
    - Service entitlement and cost management
- Security
  - User Authentication: SSO against Corporate IDP
    - Both for BTP cockpit and application
  - Propagation Principal toward SAP backend services
    - Maintain access control and comply with digital access licensing
  - Application Access controls leverage on the corporate IAM security groups

# Solution Development Principals

- Applications Data Model
  - CAP (Cloud Application Programing Model)
    - Data model
    - Odata CRUD Services
- Frontend
  - Freestyle UI5 application
  - Follow Fiori Design Guidelines
- Business Application Studio (IDE)
  - Integration to Azure DevOps
    - GIT
    - Test and Release pipelines
  - SAP BPT also has GIT and Pipelines and other services supporting Application lifecycle
- Application Access
  - Application and services controlled by Roles
  - App Roles grouped in Role collections
  - Role Collection mapped to groups inherited in the Trust configuration against Corporate IAM security groups.

# Building a Cloud Solution – MVP



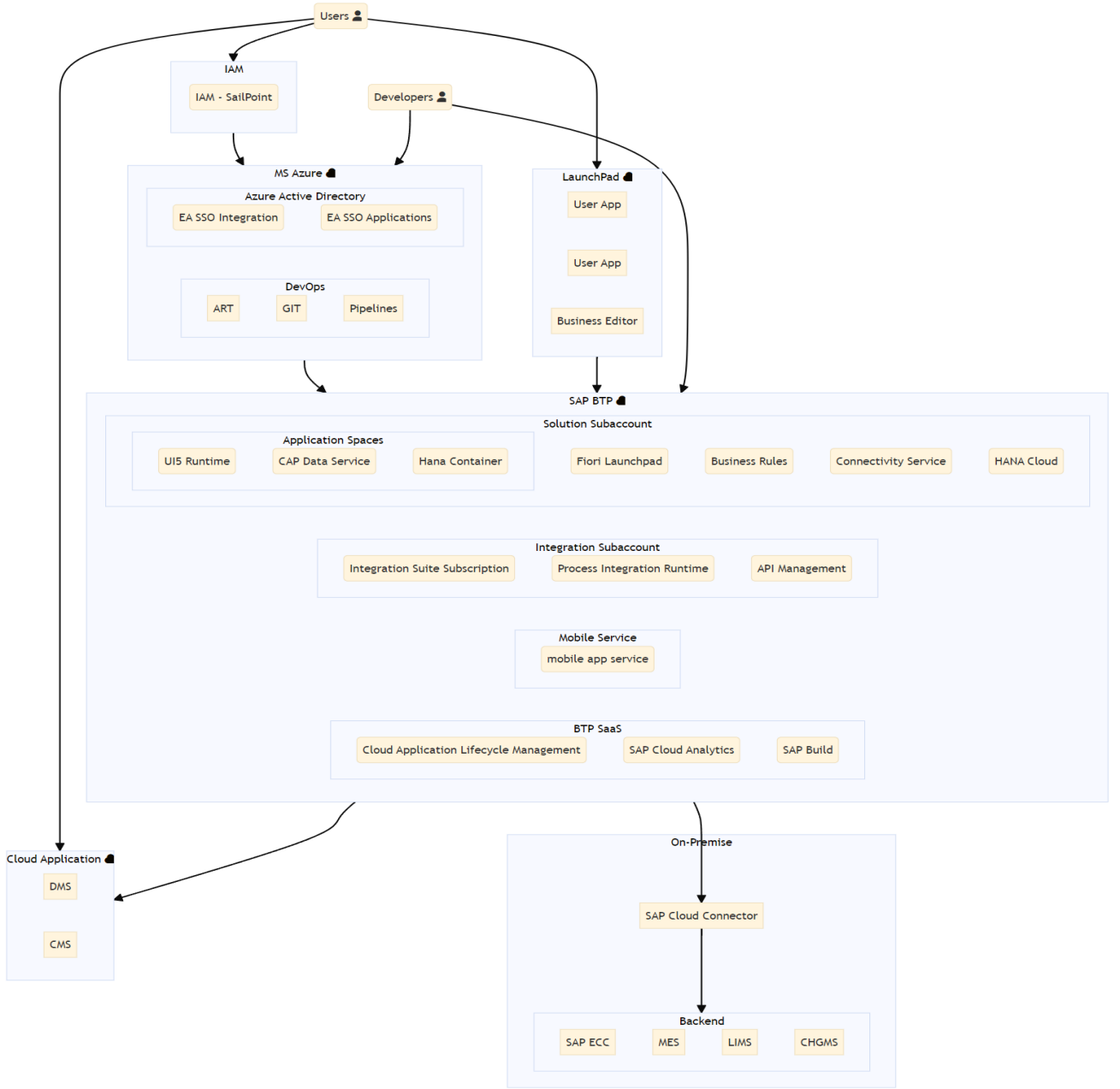

- Get Buy-In from the users, with 10% of the functional requirement and effort

# Operational Excellence and Innovation

- MVP Learnings
  - New Technical Skills
  - New Delivery Methodology
  - Continuous evolving services and functionality
  - Where did blueprinting go?
    - Not all the design and architecture will be in place from the start
    - Re-factoring and re-design will be part of the lifecycle
- Improve the ability to react to change
  - Fast Delivery
  - Fast Reaction to Error
  - Smooth adoption of new tools and services
- Continuous Delivery
    - *Build Better software faster*
  - Feedback loops
  - Test Automation
    - Integrity Testing
    - Regression Testing
    - Functional Test
  - Impact on Design and Architecture
    - Application
    - Integration Design
- Introduction of services, maintains excitement, important to keep balance
  - API Management
  - Mobile Services
  - SAP Build Apps/Process Automation
  - Event Mesh

# Building a Cloud Solution – Continuous Improvement

| Platform Features | Approach |
|---|---|
| IAM Integration | Corporate IAM used to request Application Roles |
| Authentication | All application and tools are SSO enabled |
| Central Accessibility and Access control | Fiori Launchpad leveraging access roles from IAM |
| API First | Integration Suite brokering to API from backend and cloud applications |
| User Centric | Business Rules to control features and decision logic<br>Mobile Services enabling native IOS applications |
| Data modelling and CRUD services | HANA Cloud and CAP |
| Application Life Cycle | CALM, Azure DevOps |
| Analytics | SAP Cloud Analytics |
| No-Code/Low-Code | SAP Build Apps, Process Automation |



# Impact

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Cloud native organizational change

- Let's talk cloud native
- Skills, Roles and culture in the organization

# Cloud Native: Management in the new paradigm

- *Cloud Native* more than a buzzword and technology, is and organizational journey
    - *"A set of practices that empower organizations to build and run scalable applications in modern, dynamic environments such as public, private, or hybrid clouds."* - The Cloud Native Computing Foundation
- Accepting a software culture brings complexity
    - Specially in a world of hierarchical management
    - Remember Digital Transformation:
        - **Commitment** and **Investment**
    - And this is where culture challenges can arise…
        - **Management need to be agile**, able to adapt to rapid changes in technology, business demands, and team dynamics.
        - **Teams require autonomy** to make quick decisions, especially in a DevOps environment where change is frequently and desired
        - **Failure is a learning** opportunity, open communication and support is a must.
        - Encourage and facilitate **ongoing learning and training opportunities** for their teams.
        - **Handle pragmatically new types of risks** which new technologies and methodologies may introduce
        - **Guide teams** through significant organizational change

# Organizational Impact

**New Skills:**
Platform Expertise (BTP)

**Platform Owner**
- Manage Global Account(s)
- Cost Management
- Subscription and Entitlements

**Platform Architect**
- Platform Architecture
- Cockpit Access, Subaccounts
- **Identity management**
- **On-Premise Access (SCC)**

**Platform Support Team**
- Solution Architecture/Subaccounts
- Delivery Framework Support
- Seed Ownership in the projects
- Licensing Support

**Modernize:**
Cloud Architecture Adoption

**Security Officers**
- Embrace Cloud/hybrid systems security
- Document and communicate with project (Platform ITRA)
- **Trust Management**

**QA & Compliance**
- Qualification of Cloud Platforms
- **Software Application Lifecycle**
  - Challenge Change management processes

**Central IT Operations**
- Central Services Operations
- Alert Management
- Platform Lifecycle
- **Software Delivery methodology**

**Align Objectives**
Software Culture

**PM/Team Leader/Scrum Masters**
- **Software Delivery methodology**
- DevOps Teams and tools
- **Feedback Loops**
- Software Release and Test management

**Developers**
- Open-Standards
- Code Management
- CI/CD Technology -> Academic foundation
- **Test Automation - Feedback Loops**
- Alert Automation and process visibility

**Business Side Experts**
- Product Ownership
- Citizen Development
- **Test - Feedback Loops**
  - Functional and Automated Regressions

# Wrap up

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- We have understood the strategic relevance of cloud platforms as enablers of digital transformation and innovation.
- We got inspiration when looking at the approach at implementing cloud native solutions with SAP BTP.
- We captured some of the the impact of accepting a software engineering practice and living a cloud native in our teams and organization.

# Where to Find More Information

- **SAP BTP and Services:**
  - **SAP Discovery Center – Missions and Services ,** https://discovery-center.cloud.sap/

- **Continuous Delivery: Reliable Software Releases through Build, Test, and Deployment Automation**
  - Book by David Farley and Jez Humble, 2010

- **Fiori Design Guidelines**
  - https://experience.sap.com/fiori-design/
- **CAP Model**
  - https://cap.cloud.sap/docs/
- **The Cloud Native Computing Foundation**
  - https://www.cncf.io/

# Key Points to Take Home

- Organizations must be prepared for the introduction of cloud platforms **(PaaS) in the IT landscape**
  - Technical and Leadership skills
- Identify **technical and organizational opportunities** on having a strategic approach to the introduction of cloud platforms
- Cloud Platforms (PaaS) are **strategic technical enablers** of digital transformation programs
- We are becoming software house
  - Treating software as a business require **engineering excellence**
- Adoption of **software culture** require significant organizational change management
  - The proper **commitment**, **investment** and **support** is essential for your delivery team and business to harmonize and build a positive cloud native organization

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